REMARKS

Claims 1-2, 4, 6, 8, and 10-212 are pending in the present Application with claims 11-18 and 20-21 having been withdrawn, claims 3 and 9 having earlier been canceled, claims 5 and 7 being canceled by the current amendment, and claims 22-23 being added by the current amendment. Claim 1 has been amended to better define the invention. Support for this amendment can be found in claims 5 and 7 as originally filed, for example. Claim 6 has been amended to remove the subject matter that is now already present in claim 1. Support for the subject matter of new claims 22 and 23 can be found in original Specification paragraphs 5 and 17, for example. Claims 1-2, 46, 8, 10, 19, and 22 are presently under review. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

35 USC 112

Claims 1-2, 4-8, 10, and 19 were rejected under 35 USC 112 with a statement that the specification, while being enabling for a nickel-base alloy, does not reasonably provide enablement for base alloys other than nickel-base. Applicant has amended claim one to include the subject matter of canceled claim 5 and put in the range of nickel cited in the specification at paragraph 18 of 40-70 weight percent.

35 USC 103 – Twigg and ASM Specialty Handbook

Claims 1-2, 4-8 and 19 were rejected under 35 USC 103(a) as being unpatentable over Twigg US3723108 and the ASM Specialty Handbook (ASM).

Applicant agrees that, as indicated in the Office Action, Twigg does not specify that the nickel-containing alloy would comprise tungsten. Applicant respectfully continues to traverse, however, the following Office Action Paragraphs on page 5:

> The ASM Specialty Handbook discloses that molybdenum and tungsten would both perform the function of improving high temperature strength and creep strength of nickel-base alloys (pg. 167).
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a corresponding amount of tungsten for molybdenum, as disclosed by the ASM Specialty Handbook, in the nickel-containing alloy, as disclosed by Twigg et al. ('108), because molybdenum and tungsten would be functionally equivalent in improving high temperature strength and creep strength, as disclosed by the ASM Specialty Handbook. See MPEP 2144.06.

ASM includes a Table 1 with elements and the elements' "Effects on [nickel- or iron-base alloy."

Molybdenum, tungsten	Improves high-temperature strength, good in reducing chlorination resistance; improves creep strength; detrimental for oxidation resistance at higher temperatures

The page on which this table is located (the only page supplied by the Office to Applicant) mentions

a number of other elements and effects which these elements provide.

Applicant respectfully submits that, even though two materials may offer certain benefits as indicated in the table, this does not make them "functionally equivalent" or make it obvious to replace one with a "**corresponding amount**" of the other. The cited MPEP says indicates that equivalence must be more than "functional."

Applicant notes the Response to Arguments section of the Office action on page 9 suggesting that "factually supported objective evidence" is needed per MPEP 2145. Applicant is submitting references herewith that are illustrative of differences between the two materials. Applicant is further submitting a 35 USC 132 Declaration by inventor Liang Jiang.

As can be seen from FIG. 8, page 2914 of M.S.A. Karunaratne et al., "Interdiffusion of the platinum-group metals in nickel at elevated temperatures," Acta Materialia 51 (2003) 2905-2919, W and Mo have different atomic numbers and atomic weights. Because W is much heavier than Mo, W will result in different density and strengthening effects. Furthermore, as can be seen from FIG. 10, page 2915 of *Karunaratne*, W and Mo have different diffusion rates in Nickel. Because W diffuses much slower than Mo, a different creep rate will result.

As can be seen from table 6, page 8 of Robert L. Dreshfield et al., "Analyses of Elemental Partitioning in Advanced Nickel-Base Superalloy Single Crystals," NASA/TM – 2005 – 213288, W and Mo partition differently in gamma and gamma prime. This difference will led to different strengthening effects such as those described on page 9.

Accordingly, Applicant respectfully submits that the claim 1, as well as claims 2, 4, 6, 8, 10, and 19 which depend therefrom, define allowable subject matter over Twigg and the ASM Specialty Handbook.

35 USC 103 – Toge

Claims 1-2, 4-6, 8, and 19 were rejected under 35 USC 103(a) as being unpatentable over Toge JP06-065691. Claim 1 has been amended to include the subject matter of canceled claim 7 which had not been subject to this rejection. Accordingly, Applicant respectfully submits that the claim 1, as well as claims 2, 4, 6, 8, 10, and 19 which depend therefrom, define allowable subject matter over Toge.

New claims 22 and 23

New claims 22 and 23 depend from claim 1 which Applicant believes to be in condition for

allowance for the reasons discussed above. Furthermore, these claims recite slightly narrower ranges than claim 1 with 22 relating to the niobium (about 1.25 to about 3 weight percent) and chromium (about 20 to 25 weight percent).

Summary

Should the Examiner believe that anything further is needed to place the application in better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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